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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/664,312  | 09/16/2003  | Yoshiki Kano         | 16869B-084400US     | 4170             |
| 20350   | 7590        | 04/04/2006           | EXAMINER            |                  |
| TOWNSEND AND TOWNSEND AND CREW, LLP<br>TWO EMBARCADERO CENTER<br>EIGHTH FLOOR<br>SAN FRANCISCO, CA 94111-3834 |             |                      | GENTRY, DAVID G     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2114                |                  |

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/664,312

Applicant(s)

KANO, YOSHIKI

Examiner

David G. Gentry

Art Unit

2114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/16/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claim 14 is objected to because of the following informalities: Claim 14 is exactly equivalent to claim 5. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6-8, 10, 13, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Connor et al. (U.S. Patent No. 6,295,611).

As per claims 1 and 8, Connor discloses a storage system for storing data coupled to a computer system having operating system software capable of executing a data recovery program, a method for increasing the effectiveness of restoration of data after a failure comprising:

creating a snapshot of the data stored in a particular storage system to thereby provide a first data image (column 3, lines 8-14; Note: the essential objects that are frequently updated in storage that allow for the rebuilding of the object are the same as snapshots);

using the operating system data recovery program (column 6, lines 41-43), recovering data associated with the computer system to thereby provide a second data image (column 7, lines 32-49; Note: the second data image is provided by the non-essential elements); and

combining the first data image and the second data image to provide restored data after the failure (column 7, lines 45-49; the first and second data images are combined as the non-essential elements and essential elements are combined and are updated, changed, or abandoned based on the current situation).

As per claims 4 and 13, Connor discloses a method wherein the step of creating a snapshot is performed under control of the storage system (column 6, lines 45-55).

As per claims 6 and 15, Connor discloses a method wherein the step of creating a snapshot is performed a plurality of times (column 3, lines 8-14) and the choice of the snapshot for use in the step of combining the first and the second data images is made by a system administrator (column 5, lines 13-21; Note: the recovery process is acting as the system administrator which chooses the data image that allows the system to recover to its latest state).

As per claims 7 and 16, Connor discloses a method wherein the steps of the method are performed by a snapshot management host (column 6, lines 41-43).

As per claim 10, Connor discloses a method wherein the step of operating the application program is carried out by an agent (column 6, lines 41-43; Note: the recovery manager acts as the agent).

As per claim 17, Connor discloses a storage system comprising:

Art Unit: 2114

a storage for storing data (column 4, lines 50-57);

a scheduler for invoking creations of snapshots (column 3, lines 8-14);

a recovery tool for restoring data from snapshots (column 6, lines 41-43);

a manager coupled to the scheduler for processing creations of snapshots and coupled to the recovery tool for controlling the restoring of data (column 6, lines 41-43);

Note: the recovery manager is said to coordinate phase 1 and phase 2 recovery, meaning that it processes the snapshots during phase 1);

a storage agent coupled to the manager and to the storage for controlling the storage to store and retrieve snapshots (column 6, lines 45-55); and

at least one of an applications program and a file system program coupled to the manager to allow the manager to invoke one of the applications program and the file system program to cause it to restore data under control of a feature of the one of the applications program and the file system program (column 6, lines 41-43).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2114

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 3, 5, 9, 11, 12, 14, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connor in view of Goldstein et al. (U.S. Patent No. 6,665,815).

Connor is relied upon for reasons stated in the previous section.

As per claims 2 and 11, Connor discloses a method further comprising maintaining for each such snapshot a record of whether the first data image and the second data image are consistent (column 7, lines 32-39; Note: it is understood that the system is keeping a record of whether the first data image and the second data image are consistent in order to compute the non-essential values that are needed).

Connor fails to disclose a method wherein the computer system creates more than one snapshot, and the computer system maintains a record of previous snapshots.

Goldstein discloses a method wherein the computer system creates more than one snapshot, and the computer system maintains a record of previous snapshots (column 2, lines 41-45).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the host system as described by Goldstein in the method described by Connor. It would have been obvious because keeping old snapshots allows for older errors to be recovered (Goldstein: column 2, lines 27-38).

As per claims 3 and 12, Connor fails to disclose a host system.

Goldstein discloses a method wherein the step of creating a snapshot is performed under control of a host system (column 3, lines 27-42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the host system as described by Goldstein in the method described by Connor. It would have been obvious because storing files in a disk array and controlling the disk from a host computer is a well-known method used to backup data (Goldstein: column 1, lines 7-11).

As per claims 5, 9, and 14 Connor discloses a method wherein the step of combining the first data image and the second data image to provide restored data comprises:

operating the operating system using the first data image (column 7, lines 32-38; Note: during phase 2, the first data image is operating the operating system).

Connor fails to disclose a method where the snapshots are sent to a host system.

Goldstein discloses a data recovery method wherein the snapshot is exported to a host computer system (column 3, lines 27-42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the host system as described by Goldstein in the method described by Connor. It would have been obvious because storing files in a disk array and controlling the disk from a host computer is a well-known method used to backup data (Goldstein: column 1, lines 7-11).

As per claim 20, Connor discloses a storage subsystem for storing snapshot data

Art Unit: 2114

indicative of a state of data in such storage subsystem at a given time, and for storing other data related to an application program as of the given time, whereby the snapshot data and the other data may be combined later to restore the storage subsystem to a state indicative of its condition at the given time (column 6, lines 32-43; Note: it is understood that an application program is a type of object).

Connor fails to disclose a storage subsystem adapted to be coupled to a host.

Goldstein discloses a storage subsystem adapted to be coupled to a host (column 3, lines 27-42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the host system as described by Goldstein in the method described by Connor. It would have been obvious because storing files in a disk array and controlling the disk from a host computer is a well-known method used to backup data (Goldstein: column 1, lines 7-11).

As per claim 21, Connor discloses a storage subsystem for storing snapshot data indicative of a state of data in such storage subsystem at a given time, and for storing other data related to an operating system program as of the given time, whereby the snapshot data and the other data may be combined later to restore the storage subsystem to a state indicative of its condition at the given time (column 6, lines 32-43; Note: it is understood that an operating system program is a type of object).

Connor fails to disclose a storage subsystem adapted to be coupled to a host.

Goldstein discloses a storage subsystem adapted to be coupled to a host (column 3, lines 27-42).



It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the host system as described by Goldstein in the method described by Connor. It would have been obvious because storing files in a disk array and controlling the disk from a host computer is a well-known method used to backup data (Goldstein: column 1, lines 7-11).

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connor in view of Burton et al. (U.S. Publication No. 2004/0260900).

As per claim 18, Connor fails to disclose a host.

Burton discloses a storage system comprising a storage subsystem coupled to a host, and wherein each of the recovery tool, the manager, the storage agent and the at least one of the applications program and the file system program are included in the host (paragraph 36).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the host system as described by Burton in the method described by Connor. It would have been obvious because storing files in a disk array and controlling the disk from a host computer is a well-known method used to backup data (Burton: paragraph 3).

As per claim 19, Burton discloses a storage system wherein the scheduler is included in the storage subsystem (paragraphs 39 and 40).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Gentry whose telephone number is (571) 272-2570. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**SCOTT BADERMAN**  
**SUPERVISORY PATENT EXAMINER**